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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,200	01/16/2002	John O. Lamping	108759	3057
27074	7590	01/10/2005	EXAMINER	
OLIFF & BERRIDGE, PLC. P.O. BOX 19928 ALEXANDRIA, VA 22320			MITCHELL, JASON D	
			ART UNIT	PAPER NUMBER
			2124	

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/046,200

Applicant(s)

LAMPING, JOHN O.

Examiner

Jason Mitchell

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/16/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to an application filed on 01-16-2002.
2. Claims 1-8 are pending in this case.

Drawings

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated, as indicated in paragraph 22 of the specification. See MPEP § 608.02(g).
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 'woven code 280' (par. [0045], line 5), 'executable code block 500' (par. [0095], line 8).
5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities: The specification contains several inaccurate references to the drawings:

Paragraph [0024], line 5 references to 'woven variables 131' and 'woven processes 133'. It would appear that Applicant intended to refer to 'woven variables 133' and 'woven process 134', respectively.

Paragraph [0042] line 8 references 'syntax stage 220'. It would appear that Applicant intended to refer to 'syntax stage 210'.

Paragraph [0089] lines 4-5 reference 'the exemplary embodiment shown in Fig. 3'. It would appear that Applicant intended to refer to 'the exemplary embodiment shown in Fig. 4'

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. **Claim 1 recites the limitation "the at least one part of the current stage simplified programming element" in lines 14-15.** There is insufficient antecedent basis for this limitation in the claim. Examiners best understanding will be used and the phrase will be taken to mean 'the at least one part of the programming element associated with the current stage simplified programming element'.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 and 3-6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 1 recites a method for simplifying a programming element, comprising the steps of, simplifying the programming element to create a current stage, determining at least one propagator for that current stage, associating at least one projection with the programming element and simplifying the current stage to create a next stage, and does not include embodiment in a tangible medium such as a computer or computer readable medium. Further, dependant claims 3-6 also fail to provide a technological embodiment for the invention. Therefore the claims only recite functional descriptive material and consequently nonstatutory subject matter.

Claim 7 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 7 recites a method for executing a first computation comprising the steps of generating a projection specifying a second computation, partially executing the first computation, simplifying the language constructs describing the first computation, executing the second computation and continuing the execution of the first computation, and does not include an embodiment in a tangible medium such as a computer or computer readable medium. Therefore the claims only recite functional descriptive material and consequently nonstatutory subject matter.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,745,384 to Biggerstaff (Biggerstaff).

Regarding Claim 1: Biggerstaff discloses a method for simplifying a programming element that is compliable into instructions for operating a data processing device, the programming element having at least one part, comprising: simplifying the programming element until all of the at least one part of the programming element reach a first stage to create a current stage simplified programming element (col. 9, lines 25-29 'Inline Functions component'); determining at least one propagator for the current stage simplified programming element, the propagator described in the programming element (col. 6, lines 35-39 'modifiers that anticipate optimizations that will be needed later'); associating at least one projection with the current stage simplified programming element using the at least one determined propagator (col. 6, lines 35-39 'adornments specific to composite folding are added'); simplifying the current stage simplified programming element, based at least in part on the current stage simplified programming element and the associated projections (col. 6, lines 28-35 'various transformations alter the AST'), until all of the at least one part of the current stage simplified programming element reach a next stage to create a next stage simplified

programming element (col. 6, lines 39-46 'Once this ... loop merging is complete, the optimized code for the loops is generated').

Regarding Claim 2: The rejection of claim 1 is incorporated; further, Biggerstaff discloses compiling each stage obtained from the programming element into at least a portion of the instructions for operating the data processing device (col. 6, lines 39-46 'the optimized code for the loops is generated').

Regarding Claim 3: The rejection of claim 1 is incorporated; further Biggerstaff discloses repeating the determining, associating and current stage simplifying steps using the next stage simplified programming element as the current stage simplified programming element (col. 6, lines 39-46 'Then the composite folding phase operates on the body of the resultant loops').

Regarding Claim 4: The rejection of claim 3 is incorporated; further Biggerstaff discloses repeating the determining, associating and current stage simplifying steps until the next stage simplified programming element is a final stage of the programming element (col. 6, lines 39-46 'Then the composite folding phase operates on the body of the resultant loops to simplify, rewrite, reorganize and merge').

Regarding Claim 5: The rejection of claim 1 is incorporated; further Biggerstaff discloses using the at least one determined propagator to decorate the current stage simplified programming element with the at least one projection (col. 6, lines 35-39 'adornments specific to composite folding are added').

Regarding Claim 6: The rejection of claim 1 is incorporated; further Biggerstaff discloses each simplified programming element has at least one significance (col. 6,

lines 8-11 'individual transformations'). Biggerstaff further discloses determining whether, for each of the at least one part of the current simplified programming element, that part of the current simplified programming element should be reduced (col. 6, lines 8-11 'transformations are triggered by the ... operators and operands at each subtree') so that the next stage simplified programming element properly denotes the at least one significance of that part of the current simplified programming element in the next stage simplified programming element (col. 6, lines 7-8 'distinct recursive walks of the abstract syntax tree').

Regarding Claim 7: Biggerstaff discloses a method for executing a computation described as a plurality of language constructs (col. 49, lines 36-41 'the resulting loops are woven together into a series of terms'), comprising: generating a projection on the computation, the projection specifying a second computation (col. 49, lines 36-41 'the common index expressions'); executing the computation until a portion of the computation that is conditional on a result of the projection is reached (col. 49, lines 36-41 'those terms simplified via partial evaluation'); simplifying the language constructs describing the computation sufficiently to allow the second computation specified by the projection to be executed (col. 49, lines 36-41 'the common index expressions within those terms are replaced with temporary variables'); executing the second computation to obtain the result for the projection (col. 49, lines 36-41 'whose values are computed'); and continuing the execution of the computation based on the obtained result for the projection (col. 49, lines 36-41 're-computation of the index expressions').

Regarding Claim 8: Biggerstaff discloses a method for converting a programming element into a plurality of woven code blocks the woven code blocks compilable into instructions for operating a data processing device, comprising:

- (a) identifying at least one common process (col. 6, lines 27-28 'loop merging') in the programming element;
- (b) reducing the programming element to at least one significance based on the identified at least one common process (col. 6, lines 8-11 'individual transformations are triggered');
- (c) incorporating the at least one significance into a first woven code block (col. 6, lines 39-42 'optimized code ... is generated');
- (d) determining zero, one or more of the incorporated significances that are susceptible to updating in subsequent steps of the method (col. 8, lines 31-34 'the subtree will be flagged');
- (e) invoking a propagator, based upon results of the determination (col. 8, lines 31-34 'the subtree will be flagged ... which will cause it to be scheduled for further transformation'), usable to perform any desired updates on the determined susceptible significances of the first woven code block (col. 8, lines 31-34 'scheduled for further transformation'); repeating steps (a)-(e) at least once to create a subsequent woven code block based on the immediately previously created woven code block (col. 6, lines 39-46 'code for the loops is generated ... Then the composite folding phase operates on the ... loops'), further comprising:

(f) communicating with the propagator of at least one previously created woven code block to determine if any significances of that at least one previously created woven code block are common to the subsequent woven code block (col. 8, lines 31-34 'the subtree will be flagged'); and

(g) updating any significances in at least one of the subsequent woven code block and at least one previously created woven code block (col. 8, lines 31-34 'scheduled for further transformation') that are common to the subsequent woven code block and that at least one previously created woven code block (col. 6, lines 39-46 'code for the loops is generated ... Then the composite folding phase operates on the ... loops').

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 3,781,814 to Deerfield; US 5,822,593 to Lamping et al.; US 2001/0,007,976 to Thompson et al. 'Aspect-Oriented Programming' by Kiczales et al.; 'Workshop on Compositional Software Architectures' AMC SIGSOFT; 'Implementing collaboration based Designs using Aspect-Oriented Programming' by Pulvermuller et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Mitchell whose telephone number is (571) 272-3728. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Mitchell
12/13/04

A handwritten signature in black ink, appearing to read 'TODD INGBERG', with a stylized flourish at the end.

TODD INGBERG
PRIMARY EXAMINER